

Patricia A. Rupchock
Serim Research Group
P. O. Box 4002
Elkhart, IN 46514-0002

Re: Registered Construction and Operation Status
039-13591-00221

Dear Ms. Rupchock:

The application from Serim Research Group, received on December 7, 2000, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the emission source, a test strip production line located at 23565 Reedy Drive, Elkhart, IN 46514-8318, remains classified as registered. This emission source consists of the following facilities:

- (a) One (1) dip tank.
- (b) One (1) mixing hood.
- (c) One (1) electric drying oven.
- (d) Five (5) natural gas fired infrared heaters, each rated at 0.015 million BTU per hour.
- (e) One (1) natural gas fired furnace rated at 0.1 million BTU per hour.
- (f) One (1) natural gas fired dehumidifier rated at 0.168 million BTU per hour.
- (g) One (1) natural gas fired catalytic oxidizer rated at 1.0 million BTU per hour.

The following conditions shall be applicable:

1. The Permittee shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall:
 - (1) Indicate estimated actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);
 - (2) Indicate estimated actual emissions of other regulated pollutants (as defined by 326 IAC 2-7-1) from the source.

The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 30. The annual emission statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

This registration is the third air approval issued to this source. All prior approvals are now considered obsolete as they have been included in this registration.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

no later than March 1 of each year, with the annual notice being submitted in the format attached.

Any change or modification which may increase the potential volatile organic compound (VOC) emissions to 25 tons per year or more, increase the potential emissions of any single hazardous air pollutant (HAP) to 10 tons per year or more, or increase the potential emissions of any combination of HAPs to 25 tons per year or more must be approved by the Office of Air Quality (OAQ) before such change may occur.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

ARD

cc: File - Elkhart County
Elkhart County Health Department
IDEM - Northern Regional Office
Air Compliance Section Inspector - Greg Wingstrom
Compliance Data Section - Karen Nowak
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3).

Company Name:	Serim Research Group
Address:	23565 Reedy Drive
City:	Elkhart, IN 46514-8318
Authorized individual:	
Phone #:	
Registration #:	039-13591-00221

I hereby certify that Serim Research Group is still in operation and is in compliance with the requirements of Registration 039-13591-00221.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name:	Serim Research Group
Source Location:	23565 Reedy Drive, Elkhart, IN 46514-8318
County:	Elkhart
SIC Code:	2835
Operation Permit No.:	039-8467-00221
Operation Permit Issuance Date:	April 23, 1997
Revision No.:	039-13591-00221
Permit Reviewer:	Allen R. Davidson

On December 7, 2000, the Office of Air Quality (OAQ) received an application from Serim Research Group relating to the operation of the following equipment:

- (a) One (1) dip tank.
- (b) One (1) mixing hood.
- (c) One (1) electric drying oven.
- (d) Five (5) natural gas fired infrared heaters, each rated at 0.015 million BTU per hour.
- (e) One (1) natural gas fired furnace rated at 0.1 million BTU per hour.
- (f) One (1) natural gas fired dehumidifier rated at 0.168 million BTU per hour.
- (g) One (1) natural gas fired catalytic oxidizer rated at 1.0 million BTU per hour.

History

Serim Research Group was issued a registration for a test strip production line on April 23, 1997.

No operational changes are being made at the plant. However, 326 IAC 2-5.5-2(b) requires existing emission sources with a valid air registration to reapply for approval by December 2000. This application seeks to comply with this rule.

Enforcement Issues

There are no enforcement actions pending against this emission source.

Stack Summary

Stack information will not be changed as a result of this application.

Recommendation

The staff recommends to the Commissioner that the revision be approved as a registration. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on December 7, 2000.

Emission Calculations

See Appendix A of this document for detailed emissions calculations. (4 pages)

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

The following table reflects the existing source potential to emit. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit:

Pollutant	Potential To Emit (tons/year)
PM	0
PM-10	0
SO ₂	0
VOC	23.3
CO	0.5
NO _x	0.6

HAPs	Potential To Emit (tons/year)
Toluene	9.99
Methyl Ethyl Ketone	0.51
Methanol	0.63
TOTAL	11.13

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) toluene, a hazardous air pollutant (HAP), is not equal to or greater than ten (10) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

The potential to emit volatile organic compounds (VOC) is less than 25 tons per year, but greater than ten tons per year. Therefore, the existing source is classifiable as a registration under 326 IAC 2-5.5.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM-10	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment (maintenance)
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as attainment or unclassifiable for ozone.

Federal Rule Applicability

There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants)

This source is not subject to 326 IAC 2-4.1-1 (New Source Toxics Control). It does not have potential emissions, before controls, of 10 tons per year of any HAP or 25 tons per year of any combination of HAPs.

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it is located in one of the eight counties listed in the rule and it has the potential to emit more than ten (10) tons per year of volatile organic compounds or nitrogen oxides. Pursuant to this rule, the source must annually submit an emission statement for the source. The annual statement must contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

State Rule Applicability - Dip Tank

326 IAC 8-2 (Surface Coating Emission Limitations)

There are no rules in 326 IAC 8-2 that are applicable. The test strips to be coated are made of fiberglass.

326 IAC 8-1-6 (General VOC Reduction Requirements)

This facility is not subject to 326 IAC 8-1-6 (General Reduction Requirements) because the potential to emit volatile organic compounds is less than twenty-five (25) tons per year. Therefore, the BACT (best available control technology) requirements do not apply.

State Rule Applicability - Electric Drying Oven and Mixing Hood

There are no state rules applicable to these facilities.

State Rule Applicability - Natural Gas Combustion Units

There are no state rules applicable to these facilities.

Conclusion

The operation of these facilities shall be subject to the conditions of the attached registration, No 039-13591-00221.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Serim Research Group
Address City IN Zip: 23565 Reedy Drive, Elkhart, IN 46514
ID: 039-13591-00221
Reviewer: Allen R. Davidson
Date: 12/18/00

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

1.343

11.8

Pollutant						
Emission Factor in lb/MMCF	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.0	0.0	0.0	0.6	0.0	0.5

*PM emission factor is filterable PM only. PM10 emission factor is condensable and filterable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Page 2 TSD App A

HAPs Emissions

Company Name: Serim Research Group
Address City IN Zip: 23565 Reedy Drive, Elkhart, IN 46514
ID: 039-13591-00221
Reviewer: Allen R. Davidson
Date: 12/18/00

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	1.235E-05	7.059E-06	4.412E-04	1.059E-02	2.000E-05

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	2.941E-06	6.471E-06	8.235E-06	2.235E-06	1.235E-05

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Company Name: Serim Research Group
Address City IN Zip: 23565 Reedy Drive, Elkhart, IN 46514
ID: 039-13591-00221
Reviewer: Allen R. Davidson
Date: 12/18/00

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	Lb VOC/gal solids	Transfer Efficiency
5100	6.60	99.40%	0.0%	99.4%	0.0%	6.00%	0.36030	1.000	6.56	6.56	2.36	56.73	10.35	0.00	109.34	100%
5105/7	6.60	98.80%	0.0%	98.8%	0.0%	1.20%	0.05848	1.000	6.52	6.52	0.38	9.15	1.67	0.00	543.40	100%
Toluene (5108/18)	7.23	100.00%	0.0%	100.0%	0.0%	0.00%	0.31535	1.000	7.23	7.23	2.28	54.72	9.99	0.00	ERR	100%
Methyl Ethyl Ketone (5111/12)	6.72	100.00%	0.0%	100.0%	0.0%	0.00%	0.01742	1.000	6.72	6.72	0.12	2.81	0.51	0.00	ERR	100%
5116	6.60	99.90%	0.0%	99.9%	0.0%	0.10%	0.01636	1.000	6.59	6.59	0.11	2.59	0.47	0.00	6593.40	100%
2-Propanol (5140)	6.60	99.20%	0.0%	99.2%	0.0%	0.80%	0.00924	1.000	6.55	6.55	0.06	1.45	0.27	0.00	818.40	100%

State Potential Emissions

5.31 127.45 23.26 0.00

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emission Calculations
HAP Emission Calculations

Company Name: Serim Research Group
Address City IN Zip: 23565 Reedy Drive, Elkhart, IN 46514
ID: 039-13591-00221
Reviewer: Allen R. Davidson
Date: 12/18/00

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % HAP#1	Weight % HAP#2	Weight % HAP#3	Weight % HAP#4	Weight % HAP#5	Weight % HAP#6	Weight % HAP#7	Emissions HAP#1 (ton/yr)	Emissions HAP#2 (ton/yr)	Emission s HAP#3 (ton/yr)	Emissions HAP#4 (ton/yr)	Emissions HAP#5 (ton/yr)	Emissions HAP#6 (ton/yr)	Emissions HAP#7 (ton/yr)
5100	6.60	0.36030	1.00000	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.52	0.00	0.00
5105/7	6.60	0.05848	1.00000	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.08	0.00	0.00
Toluene (5108/18)	7.23	0.31535	1.00000	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	9.99	0.00	0.00	0.00	0.00	0.00
Methyl Ethyl Ketone (5111/12)	6.72	0.01742	1.00000	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.51	0.00	0.00	0.00	0.00
5116	6.60	0.01636	1.00000	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.02	0.00	0.00
2-Propanol (5140)	6.60	0.00924	1.00000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total State Potential Emissions

0.00 9.99 0.51 0.00 0.63 0.00 0.00

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

LEGEND

HAP#1 = n/a
HAP#2 = Toluene
HAP#3 = Methyl Ethyl Ketone
HAP#4 = n/a
HAP#5 = Methanol
HAP#6 = n/a
HAP#7 = n/a